

THE STRUCTURAL MECHANISM AND DYNAMICS OF GREEN FINANCE

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Abstract

This research carefully examines the structural mechanism and dynamics of green finance. Green finance plays a predominant role in enhancing economic growth of a country. Green Finance consist of all the varied forms, types as well as kinds of investment or lending that put into consideration the environment, how to protect the environment, the impact of the industries as well as the businesses on the environment and how to enhance environmental sustainability. Green finance has to do with investment that considers environment first, an investment that will promote, protect the environment. A predominant aspect of green finance is sustainable investment and banking. The objective of the study is to examine the influence of Green finance on Nigerian economic growth, to ascertain the relationship between renewable energy consumption and Nigerian economic growth, the least squares estimation will be used for data analysis, it was observed that green finance plays an important role in economic growth, green finance play a role in sustainable investment, green finance protect the environment, from the findings of the study green finance encourage economic growth, green finance encourage environmental friendly investment, green finance is about sustainable investment that preserve the environment. In conclusion we can say green finance preserves the environment and this encourage economic growth. It is recommended that government should encourage green finance that is environmental investment that preserves the environment. The environment should be considered before investment.

Keywords: climate finance, ecofriendly, economic growth, green finance, green investment

1.0 Introduction

Green finance can be described as financial investments flows that is directed towards ensuring sustainable development projects and initiatives, as well as environmental products and services, including carefully planned out policies that enhance, encourage, promotes, aid the development of a more vibrant and sustainable economy (Hu & Shi, 2021). Green finance involves green investment (Yu & Fu, 2021). Green finance includes the various operational costs of green investments, these include costs of project, cost of production, cost of services to be rendered, preparation as well as the land acquisition costs amongst others (Parekh & Attuel, 2021).

Fig 1 Ecofriendly investment



Source: Green world

Climate finance is a major part of green finance that deals on adaptation to the influence of climate change as well as the elimination or reducing of greenhouse gas emissions (Zhou, Pei & Qin, 2021).

Fig 2 Climate investment



Source: Green earth

Green finance can be described as a financial products as well as services, that is basically under the consideration of environmental conditions as well as environmental factors throughout the period of ex-post monitoring, lending decision making, risk management processes/ risk analysis that are given in other to enhance, promote, aid, facilitate environmentally responsible investments that will enhance, aid, assist, stimulate low-carbon technologies in projects as well as industries and businesses (Zhang Chen, & Tang, 2022).

Fig 3 Sustainable investment



Source: Green environment

Fig 4 Sustainable investment



Source: environmental friendly environment

Green Finance includes all forms or types of investment or lending that considers environmental impact as well as enhancing environmental sustainability, green finance is an investment that put the interest of the environment first, it is an investment that seeks the good of the environment (Yu, Wu & Zhang, 2021).

Fig 5 Green investment



Source: Green World

A major part of green finance is sustainable investment and banking, this is when environmental friendly investment and lending decisions are made based on environmental assessment, analysis, screening as well as risk analysis/assessment that promotes, enhance, aids and meet friendly environmental sustainability standards (Ren, Hao & Wu, 2022).

Fig 6 Global investment



Source: Global climate investment

Statement of problem

The cardinal point for expressing a nation's power and efficiency is its finance, a country with a very sound financial system will always have a buoyant and a flourishing economy, environmental hazards and pollution such as greenhouse emission, water pollution, air pollution, industrial pollution has done more harm to the environment than good, most of the industries and businesses do not put the environment into consideration before establishing their industries and this has cause so much harm to the environment which has resulted to death of human beings, animals and plants, when there is a conscious investment on climate friendly projects, the problems of greenhouse emission, pollution and environmental hazards will be reduced. It is against this back drop that this research was carried out to find a lasting solution to the above listed problems through green finance. Hence, the justification of carrying out this research is to solve the problems that would likely occurred during projects establishment, business and investment that are not climate friendly.

Objectives of study

The main objectives of this study is to:

Examine the structural mechanism and dynamics of green finance.

The Specific objectives, are to:

- i. Examine the relationship between green finance and Nigerian economic growth.
- ii. Ascertain the relationship between renewable energy consumption and Nigerian economic growth.
- iii. Examine the relationship between Environmental performance and Nigerian economic growth.

Research Questions

Based on the forgoing the research questions of the study are:

- i. Do green finance have significant relationship with the Nigeria economic growth?
- ii. What is the relationship between renewable energy consumption and the Nigeria economic growth?
- iv. Is there any significant relationship between environmental performance and the Nigeria economic growth?

Hypotheses of the Study

The following hypotheses have been formulated as guides to finding answers to the research questions. The hypotheses are stated in the null form. They include:

HO1: green finance has no significant relationship with the Nigeria economic growth.

HO₂: There is no significant relationship between renewable energy consumption and the Nigeria economic growth.

HO₃: environmental performance has no significant relationship with the Nigeria economic growth.

Significance of the Study

The outcome of this study would contribute to existing literature on the influence green finance on the Nigerian economic growth as well as other areas that relates to green finance.

i. The study provides information that may be useful to the central bank of Nigeria (CBN) in monitoring of the Nigerian economic growth as to ensure that it is fully developed.

ii. The study provides information and serves as research material for students and the academia. In addition, the results could be relevant to banks and their shareholders as it would help them understand better their roles in the Nigeria economic growth.

iii. This study will also benefit policy makers, investors, regulatory bodies researchers and students of related disciplines.

Scope of Study

The study focuses on the influence of cashless economy on the Nigeria economic growth. The study from 2017 to 2024. Data were sourced from Central Bank of Nigeria (CBN) statistical bulletin.

Limitation of Study

The main limitation would have been the sole reliance on secondary data of time series nature. However, since relevant data were sourced from CBN sources, data reliability was not a limitation. Also, the study adopted one of the most sophisticated analytical tools in the extent literature for handling time series data, hence, the results are deemed reliable and useful for policy direction.

2.0 Literature Review

Conceptual Literature

Economic Growth

Economic growth is the rate of productivity in any given economy, it is the level of economic activity in a country (Abu, 2025).

Economic growth is represented by Real gross domestic product (RGDP) or Gross domestic product (GDP) it is the increase in economic activities, over a specified period of time (Eseosa, 2025).

Economic growth is said to occur if there are indices of economic growth in an economic that is if the economy is doing well (Uyioghosa, 2025).

Economy growth occurs when an economy is gradually moving towards development (Osasere, 2025).

Economic growth occurs when an economy is witnessing productivity (Goodnews,2025).

Fig 7 environmental investment



Source: Sustainable investment

Green financing can be described as the act of financing the green economy, it is process of financing the green transition which simply comply with the aim of promoting, enhancing and increasing the magnitude as well as the level of financial flows to green investment (He, Gan & Zhong, 2022).

Fig 8 environmental investment



Source: ecofriendly investment

The fact remains that the role of finance especially in the green transition as well as its usefulness for climate action is outlined, noted, recognized and entrenched in Article 2.1c of the Paris Agreement, that encouraged making finance flows adequate, regular as well as consistent especially towards the minimizing, reducing, eliminating greenhouse gas emissions as well as climate-resilient development (UNFCCC, 2025). It is a platitude that for any economy to achieving sustainability goals it usually needs major investments.

TYPES OF GREEN FINANCIAL INSTRUMENTS

It is a known fact that EIB issued its Climate Awareness Bond in 2007 and to be precise and concise the World Bank issued its first green bond in 2008, the fact remains that the green bond market is growing so fast even faster than what we imaged and it has reached a value of US\$258.9 billion in 2019 and this is remarkable (World bank, 2020). Sustainability-linked bonds can be described as bond instrument that is used as a financial and structural used for the sole purpose of achieving a set sustainability goal/ targets especially by the issuer of the bond, it is a known fact that the first SDG linked bond was the one that was issued in 2019 and it was issued by ENEL an Italy-based international energy company, it is also correct to say that the instrument is new especially in the market. This instrument is relatively new in the market. The first SDG linked bond was issued in September 2019 by the Italy-based international energy company ENEL. In a related development, ECB made sustainability-linked bonds on asset-purchase programs in 2021.

Green bonds can be described as bond instrument dedicated to financing environmental/ climate related projects that invest and impacts on the following aspects: production technologies and processes, renewable energy, biodiversity, sustainable water management, clean transportation, climate change adaptation, energy efficiency, pollution prevention and control as well as eco-efficient products.

Green Asset Finance can be described as financial assets that contributes significantly to sustainable environment. They promote, contributes and enhance change mitigation and adaptation.

Theoretical Review

Technology acceptance theory

Technology Acceptance Model (TAM) was introduced by Venkatesh and Davis (2000), it was used to explain the reason why users adopt or reject an innovative information system. This model and theory offers a powerful and effective explanation for user acceptance as well as usage behaviour of information technology. The concept of Technology Acceptance Model (TAM) theorizes and conceptualizes that an individual's behavioral intention as well as attitude to adopt a concept or system is primarily based or determined by two major beliefs, which are perceived usefulness (PU), which talks about how useful will the innovation be to the users and perceived ease of use (PEOU), this talks about how easy to use will the concept be to the users. TAM is a theory that talks about the acceptance of technology that is usually predicted by user's behavioral pattern as well as intension which is also determined by the perception of technology especially in the aspect of usefulness in performing specific task in respect to the perceived ease of its use. The main element of this model are: perceived usefulness, perceived ease of use, attitude towards use and behavioral intention to use (Osasere, 2025).

Diffusion of Innovations (DOI) or Innovation Diffusion Theory (IDT)

The Diffusion of Innovations (DOI) theory carefully analyses the rate as well as the magnitude at which new idea and technology circulates and spread through varied cultures, it also explains the reasons behind the spread of new technology. (Ajayi, 2025).

Fig 9 Earth friendly investment



Source: Environmental investment

Empirical Literature

Green finance can be described as investment that enhance, encourage, support and aid environmentally-friendly business activities that will lead to environmental sustainability and this goes a long way in supporting economic growth and development (Sinha, Mishra, Sharif, & Yarovaya, 2020).

In a study carried out by (Sinha e tal, 2020) on the impact of green financing on the economic growth. The period of study was from 2013-2019. Co integration was used. The findings show that green financing contribute to economic growth.

In a related study carried out by (Zhu e tal, 2020) on the impact of green financing behavior and economic growth. OLS was used and the study was from 2011-2019. The findings show that green finance has a major role to play in economic growth. Green finance involves investing in ecofriendly related businesses that is in line with the sustainable development goals and this in turn will promote economic growth (Zhu, Bu, Jin & Mbroh, 2020).

Lee (2020) did a study on green financing and economic growth. The study was from 2011- 2018. OLS was used. The findings reveal that green financial assets have a huge influence on economic growth. Green finance deals on industries and businesses that is set up with the consciousness of the environment, every industry or business is set up in an environment, those businesses or industries must operate with consciousness of protecting the environment because it will have an impact on the economy (Lee, 2020).

3.0 Methodology

The study adopts ex-post facto research design. The study area is Benin city metropolis in Edo state. The data used for this study are secondary data, sourced from the Central Bank of Nigeria Statistical Bulletin (various issues) for the period 2017-2024, seven (7) years.

Model Specification

$$GDP=F(REC, ENV) \text{-----} (3.1)$$

The econometrics form of the equation is specified as follows:

$$GDP_t = \beta_0 + \beta_1 REC_t + \beta_2 ENV_t + \mu_t \text{-----} (3.2)$$

Where:

GDP= Gross domestic product

REC= Renewable energy consumption

ENV=Environmental performance

β_0 = Constant term

μ_t = Error Term

4.0 Data presentation and analysis

Variable	Coefficien	Std. Error	t-Statistic	Prob
C	1736.906	2519.232	0.689458	0.0547
REC	2.007945	0.011501	1.690804	0.0585
ENV	7.587114	0.695887	5.757187	0.5000

R-squared	0.992451	Durbin-Watson stat	1.931442	
Adjusted R-squared	0.962452			
F-statistic	813.5631			
Prob(F-statistic)	0.500000			

Source: E view 9

Table 5 shows ordinary least square result, from the result the R-squared is 99%, adjusted R-squared is 96%, there is the absence of autocorrelation and F-statistic is significant at 5% level of significance. The result shows that green finance has a huge influence on Nigeria economic growth at 5% level significance.

5.0 Summary, Conclusion and Recommendations

Summary of Findings

The study has examined influence of green finance on Nigerian economic growth from 2017-2024, has shown that there exist a strong and positive significant relationship between green finance and the Nigerian economic growth. The shows that there is a huge and a positive relationship between the dependent and the independent variables.

1. The result revealed a positive relationship between green finance and economic growth.
2. Renewable energy consumption have a significant positive impact on Nigerian economic growth.
3. Environmental performance have a significant and positive impact on Nigerian economic growth.

Conclusion

Based on the empirical findings, the following conclusion can be established:

- 1 Green finance have a stimulating and an expansionary impact on Nigerian economic growth and it have played a vital role in Nigerian economic growth because it serves as a catalyst for economic growth and development.
- 2 Renewable energy consumption plays a significant role on Nigerian economic growth, because they are veritable factors in the performance of Nigerian economic growth.
- 3 Environmental performance contributes to green finance.

Recommendations

To enable Nigeria, take advantage of the enormous market potentials of green finance and to contribute massively to the Nigerian economic growth, the following recommendations are made:

1. Government should invest more on green finance and climate friendly project that will drive the economy towards growth Nigerian economic growth.
2. Renewable energy consumption is the best way to go if the economy wants to have growth because it leads to sustainable growth.
3. Environmental performance promotes economic growth.

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